

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

In the specification, paragraphs have been amended on pages 1, 2, 6, 9, 15, 16, 20 and 21.

Claims 1-3 and 6-8 have been amended. Claim 10 has been cancelled without prejudice or disclaimer. No new matter has been added. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1-9 and 11 are now pending in this application.

The specification has been amended after the TITLE to make specific reference to the foreign priority document of the present application as requested by the Examiner.

Drawings

The drawings were objected to. Applicants have amended Figures 5 and 6 to label them as "PRIOR ART", and amended Figures 1-6 to make the view numbers larger than the numbers used for reference characters. Accordingly, applicants submit that the objection to the drawings has been overcome.

Specification

The specification was objected to. Applicant has generally amended the specification in accordance with the helpful comments in the Office Action. With respect to page 8, line 1, however, the words "view" and "the" appear to be spelled correctly. Further, with respect to page 16, line 1, the word "vessel" appears to be spelled correctly.

Claim objections

Amendments to the Drawings:

The drawing sheets attached in connection with the above-identified application containing Figures 1-6 are being presented as a new formal drawing sheet or sheets to be substituted for the previously submitted drawing sheet or sheets. The drawing Figures 1-6 have been amended. Appended to this amendment is an annotated copy of the previous drawing sheet which has been marked to show changes presented in the replacement sheet of the drawing.

The specific changes which have been made to Figures 1-6 are to make the view numbers larger than the numbers used for reference characters. Figures 5-6 are also amended to include the legend "PRIOR ART".

Claims 2, 10 and 11 were objected to. This rejection is moot with respect to claim 10, which has been cancelled. With respect to claim 11, the objection is not understood as “shape” is spelled correctly in the claim. Applicants submit that the amendment to claim 2 overcomes the objection.

Rejections under 35 U.S.C. § 112, second paragraph

Claims 1-11 stand rejected under 35 U.S.C. § 112, second paragraph as being indefinite. This rejection is moot with respect to claim 10, which has been cancelled. With respect to claims 1-9 and 11, applicants have amended the claims to address the issues raised in the Office Action, and submit that the rejection has been overcome.

Rejections under 35 U.S.C. §§ 102 and 103

Claim 1 stands rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,149,492 to Arai et al. (“Arai”). Claim 10 stands rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,353,651 to Gou et al. (“Gou”). Claims 1 and 11 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,761,260 to Schmitt et al. (“Schmitt”). Claims 1-3, 7 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over applicants alleged admission of prior art (“APA”) in view of the “1964 Proceedings of . . .” (“1964 Proceedings”) or “Small and Medium . . .” (“Small and Medium”). Claim 2 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over APA in view of U.S. Patent No. 3,715,270 to Jackson (“Jackson”). Claim 4-6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over APA in view of U.S. Patent No. 4,687,625 to Hasegawa et al. (“Hasegawa”). Claim 2 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over APA in view of Arai. This rejection is moot with respect to claim 10, which has been cancelled. With respect to claims 1-9 and 11, applicants respectfully traverse for at least the following reasons.

Arai fails to disclose or suggest either the main-steam-line penetration point or the suppression pool as recited in claim 1. Claim 1 recites “a main-steam-line penetration point disposed on the first side of the reactor containment vessel, wherein the at least one main steam pipe penetrates the reactor containment vessel at the main-steam-line penetration point”

and “wherein the distance between an outer surface of the reactor pressure vessel and the inner surface of the first side is longer than a distance between the outer surface and the inner surface on the second side.” Thus in claim 1, the main-steam-line penetration point is on the first side, where the first side is the side where the distance between an outer surface of the reactor pressure vessel and the first side inner surface is longer. Arai, however, does not disclose or suggest the location of the penetration point of the main-steam-line 7. Applicants submit that the schematic shown in Fig. 1 of Arai is not sufficient to show the point at which the main-steam-line 7 penetrates the reactor containment vessel 1.

Moreover, Arai fails to disclose “a suppression pool of annular shape horizontally surrounding the reactor pressure vessel.” In Arai, there is no such suppression pool surrounding the reactor pressure vessel 3. Thus, Arai fails to suggest or disclose the reactor containment vessel of claim 1 for at least this reason.

Schmitt also fails to suggest the reactor containment vessel of claim 1. The reactor containment vessel of claim 1 is a containment vessel of a boiling water reactor, and specifically recites, for example, “the at least one main steam pipe of the boiling water reactor penetrates the reactor containment vessel.” In a boiling water reactor, steam is generated in the reactor containment vessel, and main steam pipes are directly connected to and penetrate the reactor containment vessel. For example, in claim 1, “the reactor pressure vessel [is] directly connected to at least one main steam pipe” and “wherein the at least one main steam pipe penetrates the reactor containment vessel.” In other types of nuclear reactors, steam is generated in steam generators which are separated from the reactor pressure vessel, and the main steam pipes are connected to the steam generators and not directly to the reactor pressure vessel. Schmitt does not disclose or suggest a reactor containment vessel of a “boiling water reactor” with a direct connection to the main steam pipes. Schmitt discloses a reactor of the other type and does not disclose “the reactor pressure vessel being directly connected to at least one main steam pipe” and “wherein the at least one main steam pipe penetrates the reactor containment vessel” as recited in claim 1.

Moreover, like Arai, Schmitt does not disclose or suggest "a suppression pool of annular shape horizontally surrounding the reactor pressure vessel". Thus, Schmitt also fails to suggest or disclose the reactor containment vessel of claim 1.

The Office Action in the rejection over APA in view of either "1964 Proceedings" or "Small and Medium" relies on "1964 Proceedings" or "Small and Medium" for showing a reactor where the "reactor is offset in a particular direction." The "1964 Proceedings" or "Small and Medium", however, do not disclose or suggest a boiling water reactor where "the reactor pressure vessel [is] directly connected to at least one main steam pipe" and "wherein the at least one main steam pipe penetrates the reactor containment vessel".

Thus, "1964 Proceedings" or "Small and Medium", disclosing a different arrangement than a boiling water reactor with a reactor pressure vessel directly connect to a main steam pipe, do not suggest modifying the boiling water reactor of the APA to have an arrangement where the main-steam-line penetration point is on a first side of the reactor pressure vessel, where that first side has the offset arrangement as recited in claim 1.

Moreover, "1964 Proceedings" or "Small and Medium" do not suggest that for the reactor of the APA, it would not have been obvious to dispose the reactor pressure vessel off-center as in claim 1. The "1964 Proceedings" or "Small and Medium" do not disclose or suggest "a suppression pool of annular shape horizontally surrounding the reactor pressure vessel". The "Emergency condenser 2" on Page 78 of "Small and Medium" appears to provide some of the function of a suppression pool. With the design on page 78 with the cylindrical tank "Emergency condenser 2" disposed in a containment vessel, it would be natural to dispose the reactor pressure vessel off-center in the containment vessel. For a design with an annular suppression pool surrounding the reactor pressure vessel, however, such as the suppression pool 12 of the APA, it would not have been obvious to dispose the reactor pressure vessel off-center as in claim 1.

Jackson and Hasegawa were cited for allegedly teaching a reactor vessel with a non-circular horizontal cross-sectional shape, and an air conditioner, respectively, but fail to cure the deficiencies of the references discussed above.

The dependent claims all ultimately depend from claim 1, and are thus patentable for at least the same reasons as well as for further patentable features recited therein.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

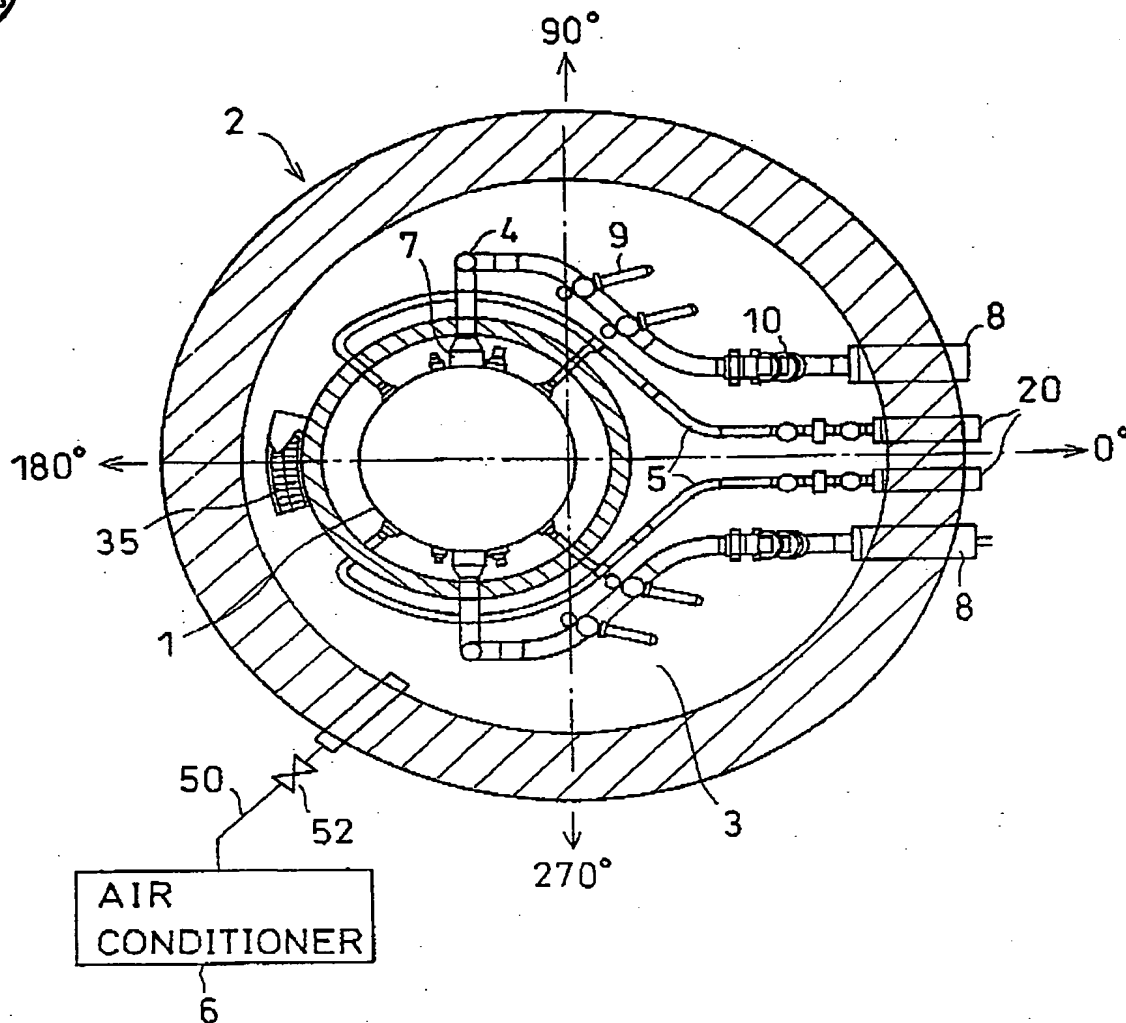
Date December 8, 2004

By Thomas G. Bilodeau

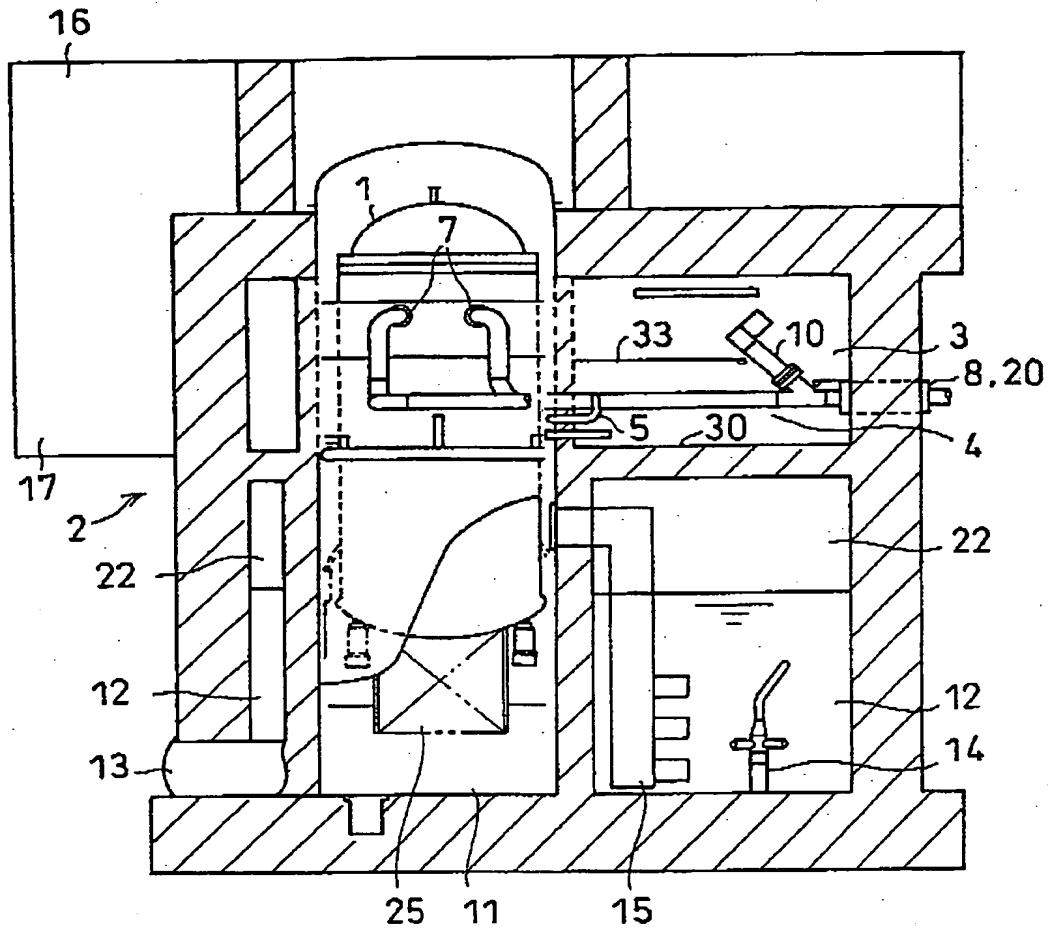
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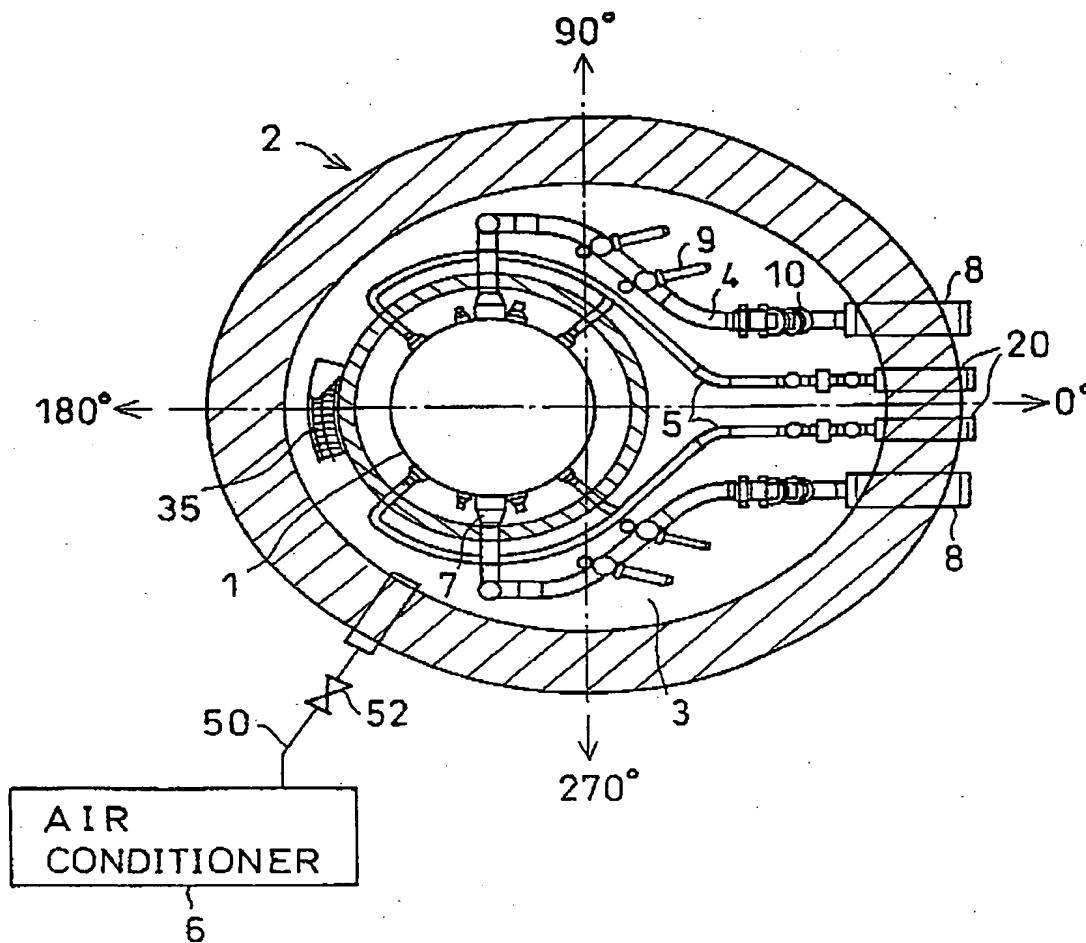


~~FIG. 1~~
 FIG. 1



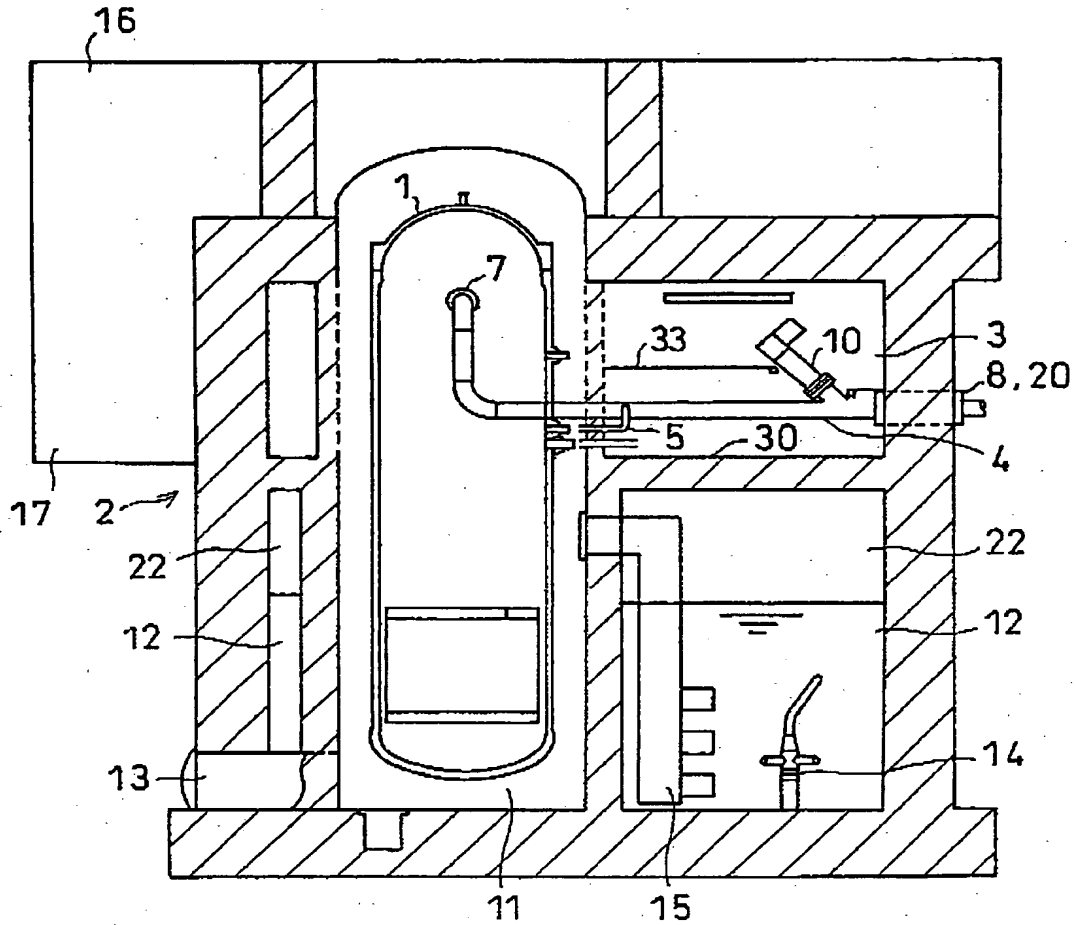
~~FIG. 2~~

FIG. 2



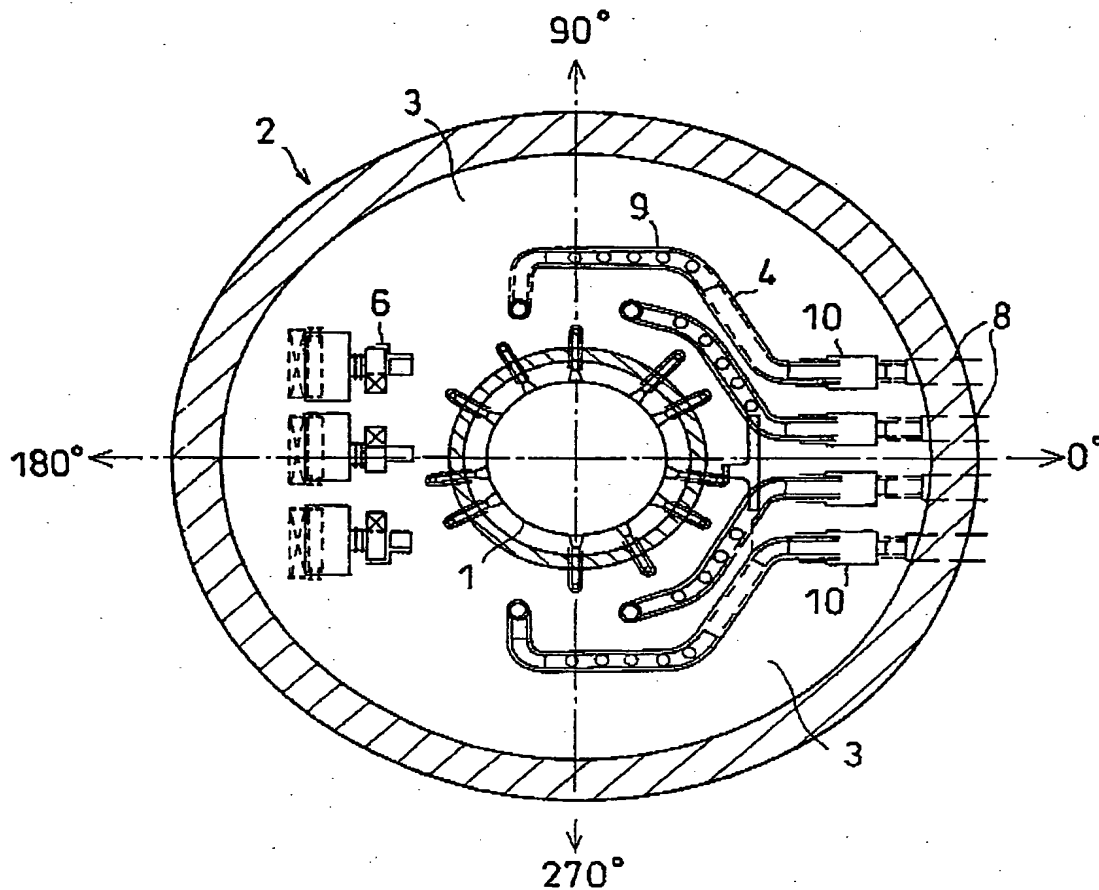
~~FIG. 3~~

FIG. 3



~~FIG. 4~~

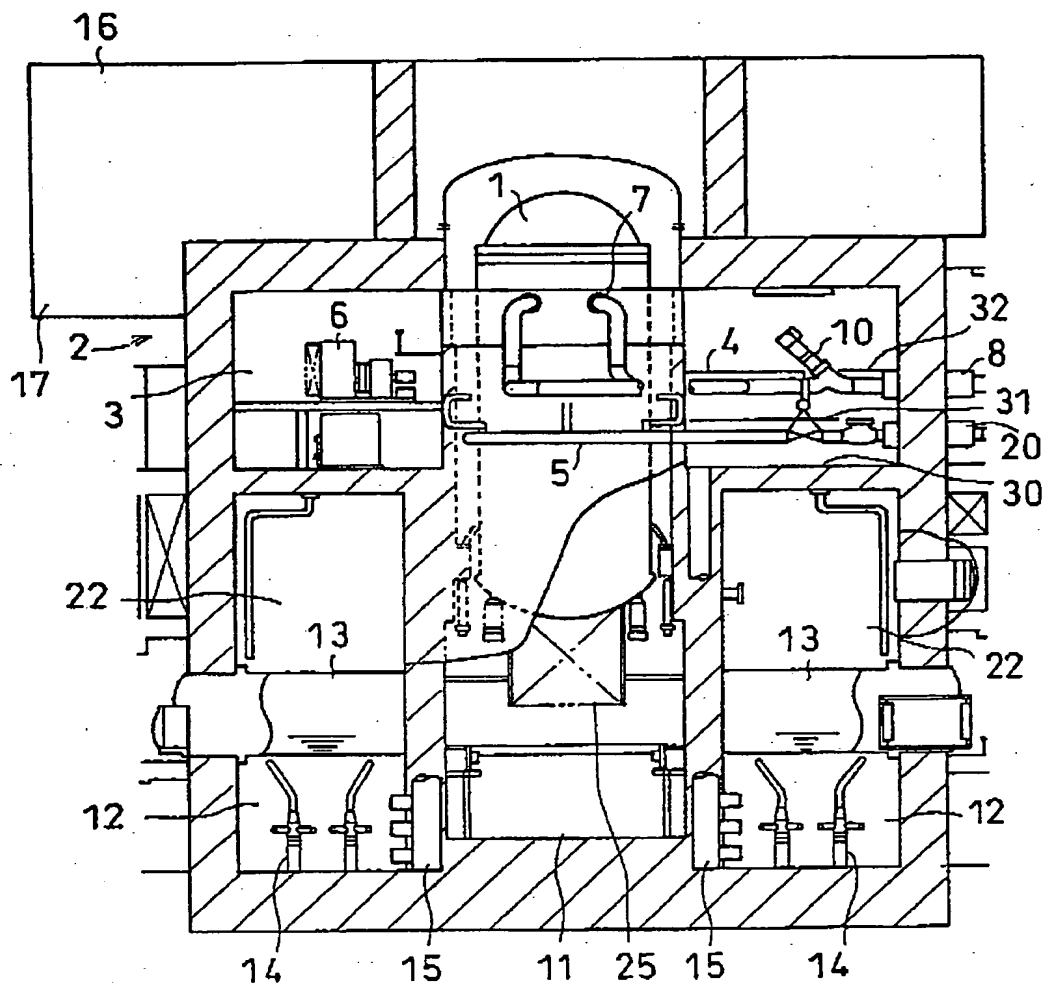
FIG. 4



PRIOR ART

~~FIG. 5~~

FIG. 5



PRIOR ART
~~FIG. 6~~

FIG. 6